

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 119466	FOR FURTHER ACTION <div style="float: right;">See Form PCT/IPEA/416</div>	
International application No. PCT/AU2004/000887	International filing date (day/month/year) 5 July 2004	Priority date (day/month/year) 3 July 2003
International Patent Classification (IPC) or national classification and IPC Int. Cl.⁷ E04D 5/10, 5/12, E04F 13/04		
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1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 7 sheets, as follows:

☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒ Box No. I Basis of the report
☐ Box No. II Priority
☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐ Box No. IV Lack of unity of invention
☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐ Box No. VI Certain documents cited
☐ Box No. VII Certain defects in the international application
☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 3 February 2005	Date of completion of the report 17 August 2005
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/000887

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1 (b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 2-5, 7-10 as originally filed/furnished

pages* 1, 1a, 6, 6a received by this Authority on 22 July 2005 with the letter of 22 July 2005

pages* received by this Authority on with the letter of

☒ the claims:

pages as originally filed/furnished

pages* as amended (together with any statement) under Article 19

pages* 11-13 received by this Authority on 22 July 2005 with the letter of 22 July 2005

pages* received by this Authority on with the letter of

☒ the drawings:

pages 1/3-3/3 as originally filed/furnished

pages* received by this Authority on with the letter of

pages* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
☐ the claims, Nos.
☐ the drawings, sheets/figs
☐ the sequence listing (*specify*):
☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70:2(c)).

- ☐ the description, pages
☐ the claims, Nos.
☐ the drawings, sheets/figs
☐ the sequence listing (*specify*):
☐ any table(s) related to the sequence listing (*specify*):

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/000887**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims 1-25	YES
	Claims -	NO
Inventive step (IS)	Claims 1-25	YES
	Claims -	NO
Industrial applicability (IA)	Claims 1-25	YES
	Claims -	NO

2. Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report have been considered for the purposes of this report:

D6 – US 6167668
D8 – US 6123172
D9 – WO 2001/092618

NOVELTY (N)

Claim 1 as presently defined meets the criteria set forth in PCT Article 33(2) for novelty. The prior art published before the priority date does not disclose a multi-layered covering comprising of a porous, resilient and flexible outer fabric layer which allows the outer coating to penetrate therethrough and being formed from a group consisting of a strong woven fabric blanket, a non-woven fabric or batt and a mesh layer; a second backing layer for strengthening and combining with the fabric layer and having a series of through holes to allow the outer coating to penetrate through the second layer to the building or other solid object; a bonding layer or means bonding the second layer to the fabric layer, an adhesive layer disposed on the opposite side of the backing layer to the fabric layer and a sacrificial or removable peel-off layer protecting the adhesive layer.

Appended claims 2-25 add further features to those defined in claim 1 and are therefore also novel.

INVENTIVE STEP (IS)

Claims 1-25 also meet the criteria set out in PCT Article 33(3) with regard to the requirement of Inventive Step because the prior art does not obviously suggest to a person skilled in the art the use of a multi-layered covering defined by the claims.

INDUSTRIAL APPLICABILITY (IA)

The claims are related to products capable of commercial application.

10/563026

1 IAP15 Rec'd PCT/PTO 30 DEC 2005

Multi-layer covering

Field of the Invention

This invention relates to a multi-layer covering and in particular to a covering for a wall, ceiling floor, roof or the like of a building or other structure. The invention
5 also relates to a method for covering a wall, ceiling, floor, roof or the like by applying a covering to the wall, ceiling, floor, roof or the like.

Background of the Invention

It is known to those who are familiar in the art that cracks and undulations of
10 surfaces appear in buildings and structures at the outset of the building process due to poor workmanship, and later, once the building starts to move and settle, cracks appear due to movement of base materials and framework. It is known to improve the integrity of existing buildings by filling cracks in the walls, or ceilings of the building and applying render. However, for the most part, existing methods for treating
15 buildings by rendering them or the like, are time consuming, require extensive preparation and are generally only suitable for application by skilled tradespersons. Consequently, existing wall and ceiling treatment and rendering systems are expensive and unsuitable for unskilled and semi-skilled home renovators.

Any discussion of documents, acts, materials, devices, articles or the like which
20 has been included in the present specification is solely for the purpose of providing a context for the present invention. It is not to be taken as an admission that any or all of these matters form part of the prior art base or were common general knowledge in the field relevant to the present invention as it existed before the priority date of each claim of this application.

25

Summary of the Invention

In a first aspect of the present invention, there is provided a multi-layer covering for application to a building or other solid object and which supports an outer coating, the multi-layer covering including a first layer comprising:-

30 (a) a fabric layer defining an outer surface of the multi-layer covering, the fabric layer being porous, resilient and flexible and allowing penetration by the outer coating, in use, and being selected from the group consisting of:

(i) a strong woven fabric blanket;

(ii) a non-woven fabric or batt;

35 (iii) a mesh layer;

and wherein the multi-layer covering further comprises:

1a

(b) a second layer being a backing layer fixed to the fabric layer, the backing layer being a web which strengthens and combines with layer (a) to provide strength to the same to allow the fabric layer to bridge cracks and gaps in the base object and wherein a series of through holes are present in the second layer and wherein, in use,
5 when the multi-layer covering is applied to a building or other solid object, and an outer coating applied, the holes allow the outer coating to penetrate through the second layer to the building or other solid object.

(c) a bonding layer or a means bonding the second layer to the fabric layer;

(d) an adhesive layer disposed on the opposite side of the backing layer to the
10 fabric layer; and

(e) a sacrificial or removable peel-off layer protecting the adhesive layer.

Detailed Description of a Preferred Embodiment

Referring to the drawings Figure 1 shows a multi-layer covering 10 comprising a first layer of a fabric which in the particular embodiment is a fluffy fabric 12 having a thickness of 2 to 4mm, but which could, as described below, also be a mesh. The fabric is typically made of woven fibre glass but may be woven from other plastic materials, including recycled plastics such as recycled PET. The fabric may also be a batt or other unwoven matted plastic matrix, including a spun-bonded layer, or other suitable non-corrosive, non-toxic, flexible material resistant to radiation, ultra-violet, rays, most commercial solvents, (including mineral turpentine, kerosene, petrol, detergents, and paint thinners and the like).

Where a woven fabric, or non-woven fabric such as a spun bonded layer, is used the gaps between the fibres in the weave are generally between 0.3mm to 3.0mm and preferably between 0.6mm and 3.0mm. Where a batt or the like is used a matrix of closely spaced "particle holes" 27 having a diameter of from 0.3mm to 3mm, most preferably 0.6mm to 3mm may be punched through the batt.

Fixed to one side of the fabric by adhesive or any other suitable means is a building paper backing layer 12. Fixed to that layer is a foil multilayer comprising two layers of metallic reflective foil 16 and 20 sandwiching a layer of paper 18. In other embodiments a single layer of metallic reflective foil may substitute for the foil multilayer and, as shown in Figure 2, the building layer backing paper and the foil multilayer may be substituted by a single strong metallic reflective foil layer 20.

A layer of adhesive 22 coats the opposite face of the foil layer 20 and this is protected by a peel-off protective backing layer 24.

With reference to Figure 1 and 1a in particular, a rectangular or square pattern or grid of blister holes 29 is punched through the layers 12, 16, 18, 20, 22 and 24. The holes need not extend through the peel-off layer 24, but typically will. The diameter D of the holes is generally from 0.5mm to 10mm but preferably 1mm to 5mm. Generally the spacing between the holes may be 10mm to 300mm but the preferred spacing between the blister holes is 10mm to 50mm. The holes allow air to escape during application of the covering and provide an economical and innovative guide line between the holes for on site cutting to match an adjacent covering layer, and to allow penetration by coatings through this backing layer to a substrate or object to which the covering is applied, as described in more detail below.

6a

Figure 2 shows an alternative embodiment of covering 10a in which the fabric 12 is attached by adhesive, or other suitable means, to a single strong metallic reflective foil layer 26, the reverse face of the wall covering being coated in a layer of adhesive 22, covered by a peel-off protective layer, not shown in Figure 2 which illustrates the covering attached to a wall, after the peel-off protective layer has been removed.

CLAIMS:

1. A multi-layer covering for application to a building or other solid object and which supports an outer coating, the multi-layer covering including a first layer comprising:-
 - 5 (a) a fabric layer defining an outer surface of the multi-layer covering, the fabric layer being porous, resilient and flexible and allowing penetration by the outer coating, in use, and being selected from the group consisting of:
 - (i) a strong woven fabric blanket;
 - (ii) a non-woven fabric or batt;
 - 10 (iii) a mesh layer;
 - and wherein the multi-layer covering further comprises:
 - (b) a second layer being a backing layer fixed to the fabric layer, the backing layer being a web which strengthens and combines with layer (a) to provide strength to the same to allow the fabric layer to bridge cracks and gaps in the base object and
 - 15 wherein a series of through holes are present in the second layer and wherein, in use, when the multi-layer covering is applied to a building or other solid object, and an outer coating applied, the holes allow the outer coating to penetrate through the second layer to the building or other solid object.
 - (c) a bonding layer or a means bonding the second layer to the fabric layer;
 - 20 (d) an adhesive layer disposed on the opposite side of the backing layer to the fabric layer; and
 - (e) a sacrificial or removable peel-off layer protecting the adhesive layer.
2. A multi-layer covering as claimed in claim 1 wherein the holes in layer (b) comprise a grid of blister holes punched through that layer.
- 25 3. A multi-layer covering as claimed in claim 2 wherein the holes have a diameter of 0.5mm to 10mm and a spacing between the holes of 10mm to 300mm.
4. A multi-layer covering as claimed in claim 3 wherein the holes have a diameter of 0.6mm to 5mm, and a spacing between the holes of 10mm to 50mm.
5. A multi-layer covering as claimed in claim 1 wherein a grid of through holes is
- 30 defined in at least layers (a) and (b) of the multi-layer covering.
6. A multi-layer covering as claimed in claim 5 wherein the holes have a diameter of 0.5mm to 10mm and a spacing between the holes of 10mm to 300mm.
7. A multi-layer covering as claimed in claim 6 wherein the holes have a diameter of 0.6mm to 5mm, and a spacing between the holes of 10mm to 50mm.
- 35 8. A multi-layer covering as claimed in any preceding claim wherein layer (a) is wider than layer (b) so that layer (a) overlaps layer (b) at opposite sides of layer (b).

9. A multi-layer covering as claimed in any preceding claim wherein the flexible, porous, resilient strong woven fabric has a thickness from 2mm to 20mm, the fabric being made from fibres or strands and wherein either gaps between fibres in the fabric are defined in the range of 0.3mm to 3.0mm or holes having a diameter of 0.3mm to 3.0mm are defined in the fabric.
10. A multi-layer covering as claimed in claim 9 wherein layer (a) is a fabric which is from 2mm to 5mm thick.
11. A multi-layer covering as claimed in any one of claims 1 to 8 wherein layer (a) is a flexible mesh layer that defines a spacing between strands of the mesh of 3mm to 20mm.
12. A multi-layer covering as claimed in any one of claims 1 to 8 wherein layer (a) is a non-woven fabric or batt having a thickness from 2mm to 20mm, the fabric being made from fibres or strands and wherein either gaps between fibres in the fabric are defined in the range of 0.3mm to 3.0mm or holes having a diameter of 0.3mm to 3.0mm are defined in the fabric.
13. A multi-layer covering as claimed in any one of claims 1 to 12 wherein the fabric layer is made from a plastics material such as fibre glass or PET fibres.
14. A multi-layer covering as claimed in any preceding claim wherein the backing layer is a metallic reflective foil.
15. A multi-layer covering as claimed in any one of claims 1 to 13 wherein the backing layer includes a metallic reflective foil and building paper.
16. A multi-layer covering as claimed in any one of claims 1 to 13 wherein the backing layer is a building paper.
17. A multi-layer covering as claimed in any one of claims 1 to 13 wherein the backing layer includes a mesh layer, and the fabric layer is a strong woven fabric or a non-woven fabric or batt.
18. A multi-layer covering as claimed in claim 17 wherein the backing layer further includes a metallic reflective foil.
19. A multi-layer covering as claimed in any one of claims 1 to 13 wherein the backing layer includes two metallic reflective foils sandwiching a sheet of building paper.
20. A method of treating a wall, ceiling, roof, or floor by applying a multi-layer covering as claimed in any one of claims 1 to 19 to the wall, ceiling or floor comprising the steps of:
- removing the removable or sacrificial peel off layer from the multi-layer covering;

applying the multi-layer covering to the wall, ceiling, roof, or floor using the adhesive layer to retain the multi-layer covering in position; and

applying one or more coatings to the outer layer of the multi-layer covering.

21. A method of treating a wall ceiling, roof, or floor as claimed in claim 20
5 wherein the step of applying one or more coatings comprises applying one or more layers of acrylic render or paint.
22. A method as claimed in any one of claims 20 to 21 wherein the multi-layer covering is applied to a wall and the coating is a render or paint applied with a brush, roller, or spray gun or the like.
- 10 23. A method as claimed in claim 21 wherein the paint or render includes cement and/or sand particles and an acrylic polymer binder and wherein the sand and cement particles penetrate into the gaps between the fibres of the fabric or the holes in the backing layer as far as the face of the wall so that the covering is saturated with acrylic render or paint.
- 15 24. A method as claimed in any one of claims 20 to 21 wherein the covering is applied to a roof and the coating is an adhesive or sealant.
25. A method as claimed in any one of claims 20 to 21 wherein the covering is applied to a floor and the coating is tiling cement, grout, or adhesive.